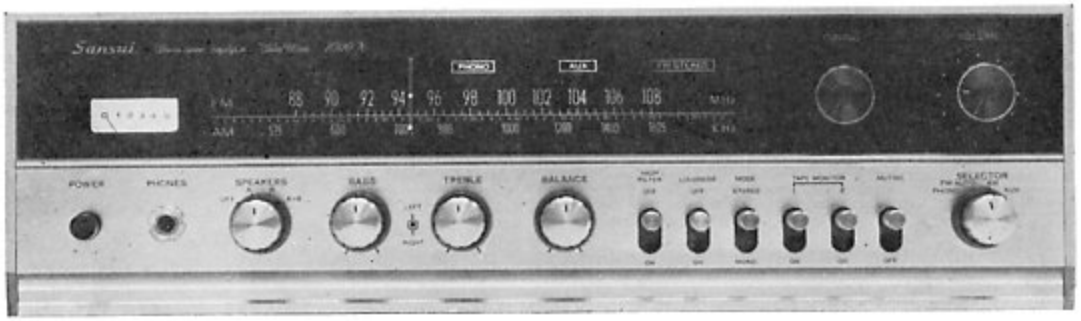
SERVICE MANUAL

SOLID-STATE AM/FM STEREO TUNER AMPLIFIER

SANSUI 1000X



Sansui

SANSUI ELECTRIC CO., LTD.

CONTENTS

GENERAL TROUBLESHOOTING CHART 3, 4
CUSTOM MOUNTING 5, 6
DISASSEMBLY PROCEDURE 7
BLOCK DIAGRAM 8
ALIGNMENT 9, 10, 11, 12, 13, 14
SCHEMATIC DIAGRAM 15, 16
PRINTED CIRCUIT BOARDS AND PARTS LIST
..... 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28
OTHER PARTS AND THEIR POSITION ON CHASSIS
..... 29, 30

Sansui
TUNING
VOLUME
88 90 92 94 96 98 100 102 104 106 108
MHz
FM
AM
535
1605
KHz
SELECTOR
POWER
PHONES
SPEAKERS
BASS
TREBLE
BALANCE

GENERAL TROUBLESHOOTING CHART

If the amplifier is otherwise operating satisfactorily, the more common causes of trouble may generally be attributed to the following:

1. Incorrect connections or loose terminal contacts. Check the speakers, record player, tape recorder, antenna and line cord.
2. Improper operation. Before operating any audio component, be sure to read the manufacturer's instructions.
3. Improper location of audio components. The proper positioning of components, such as speakers and turntable, is vital to stereo.
4. Defective audio components.

The following are some other common causes of malfunction and what to do about them:

PROGRAM	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
AM, FM or MPX reception	A. Constant or intermittent noise heard at times or in a certain area	* Discharge or oscillation caused by electrical appliances, such as fluorescent lamp, TV set, D.C. motor, rectifier or oscillator * Natural phenomena, such as atmospherics, statics or thunderbolts * Insufficient antenna input due to ferroconcrete wall or long distance from the station * Wave interference from other electrical appliances	* Attach a noise limiter to the electrical appliance causing the noise, or attach it to the amplifier's power source * Install an outdoor antenna and ground the amplifier to raise the signal-to-noise ratio * Reverse the power cord plug-receptacle connections * If the noise occurs at a certain frequency, attach a wave trap to the ANT. input * Keep the set at a proper distance from other electrical appliances
	B. The needle of the tuning meter does not move sharply	* Receiver is located in a weak signal area	* Place the set to receive maximum signal strength
	C. The zero point of the meter diverges much	* Regional difference in field intensity.	* The unit is not at fault
AM reception	A. Noise heard at a particular time of a day, in a certain area or over part of dial	* Due to the nature of AM broadcasts	* Install the antenna for maximum antenna efficiency. See "ANTENNA" in the operating instructions * In some cases, the noise can be eliminated by grounding the amplifier or reversing the power cord plug-receptacle connections
	B. High-frequency noise	* Adjacent-channel interference or beat interference * TV set too close to audio system	* Although such noise cannot be eliminated by the amplifier, it is advisable to adjust the TREBLE control from midpoint to left and switch on the HIGH FILTER * Keep the TV set at a proper distance from the audio system
FM reception	A. Noisy	* Poor noise limiter effect or too low S/N ratio due to insufficient antenna input Note: FM reception is affected considerably by transmission conditions of stations: power and antenna efficiency. As a result, you may receive one station quite well while receiving another station poorly	* Install the antenna (supplied) for maximum signal strength * If this does not prove effective, use an outdoor antenna designed exclusively for FM. When you use a TV antenna for both TV and FM with a splitter, make sure TV reception is not affected * An excessively long antenna may cause noise

PROGRAM	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
FM reception (cont'd)	B. A series of pops is heard	* Ignition noise caused by an automobile engine	* Install the antenna and its lead-in wire in proper distance from the road or raise the antenna input as described above
	C. Tuning noise between stations	* This results from the nature of the FM reception. As the station signal becomes weak, the noise limiter effect is decreased, and the amplification of the limiter, in turn, is enlarged, generating a noise	* Turn the MUTING switch on. It reduces the sensitivity, and therefore it should be used sparingly
FM-MPX reception	A. Noise heard during FM-MPX reception while not heard during FM mono reception	* Weaker signal because the service area of the FM-MPX broadcast is only half that of the FM mono broadcast	* Install the antenna for maximum antenna input * Switch on the HIGH FILTER and/or turn the TREBLE control from midpoint, left
	B. Clearness of channel separation is decreased during reception	* Excess heat	* Circulation of air is important to the amplifier. Be sure that air is flowing under the amplifier
	C. The stereo indicator blinks on and off	* Interference	* The indicator is not at fault. Adjust VR_{401}
	D. The stereo indicator blinks on and off even though stereo station is not received	* Interference	* The indicator is not at fault. Adjust VR_{401}
Record playing or tape playback	A. Hum or howling	* Record player placed directly on speaker * Wire other than shielded wire used * Loose terminal contact * Shielded wire too close to line cord, fluorescent lamp or other electrical appliances * Nearby amateur radio station or TV transmission antenna	* Place a cushion between the player and the speaker box or place them away from each other * The connecting shielded wire should be as shord as possible * Turn the BASS control from midpoint to left * Consult the authorized SANSUI Service Station
	B. Surface noise	* Worn or old record * Worn stylus * Stylus dusty * Improper stylus pressure * Worn playback head	* Switch on the HIGH FILTER and turn the TREBLE control from midpoint to left * Clean or replace the stylus * Replace the playback head.
All stereo programs	BALANCE control is not at midpoint when equal sound comes from left and right channels	* It is important to adjust for equal sound from both channels. It should not always be set to the midpoint	* Set the MODE switch to MONO and then set the BALANCE control to a position where equal sound comes from both channels

CUSTOM MOUNTING

How to Install the Amplifier in a Wooden Cabinet

1. Make a cabinet window of 392mm or $15^{7}/_{16}''$ in width and 110mm or $4^{21}/_{64}''$ in height.

2. Place two square pieces of wood (20×20×210mm or $^{25}/_{32}''\times{}^{25}/_{32}''\times 8^{17}/_{64}''$) for supporting the amplifier in the bottom board of the cabinet.

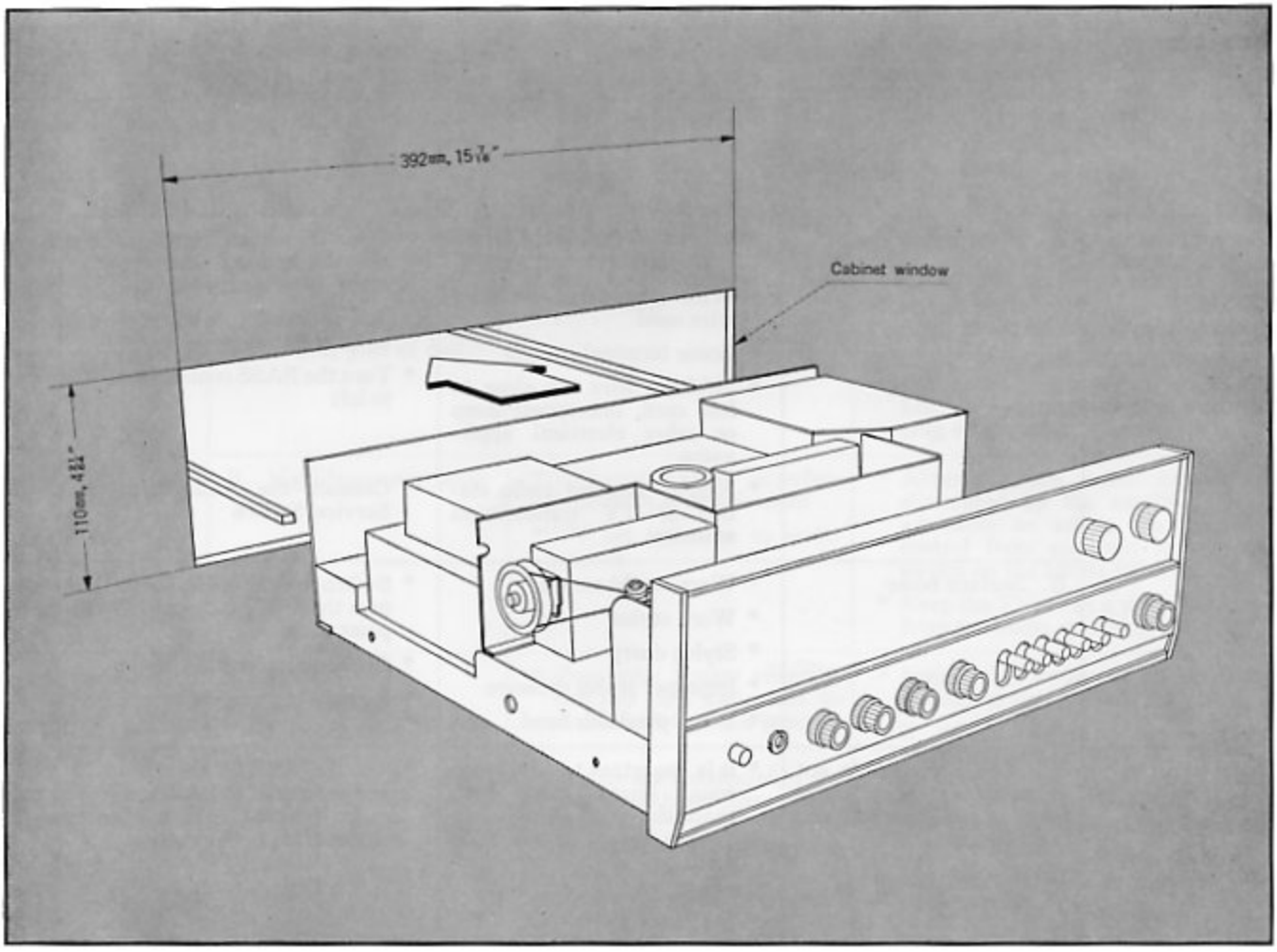
3. Cut two holes four attachment bolts in the bottom board of the cabinet.

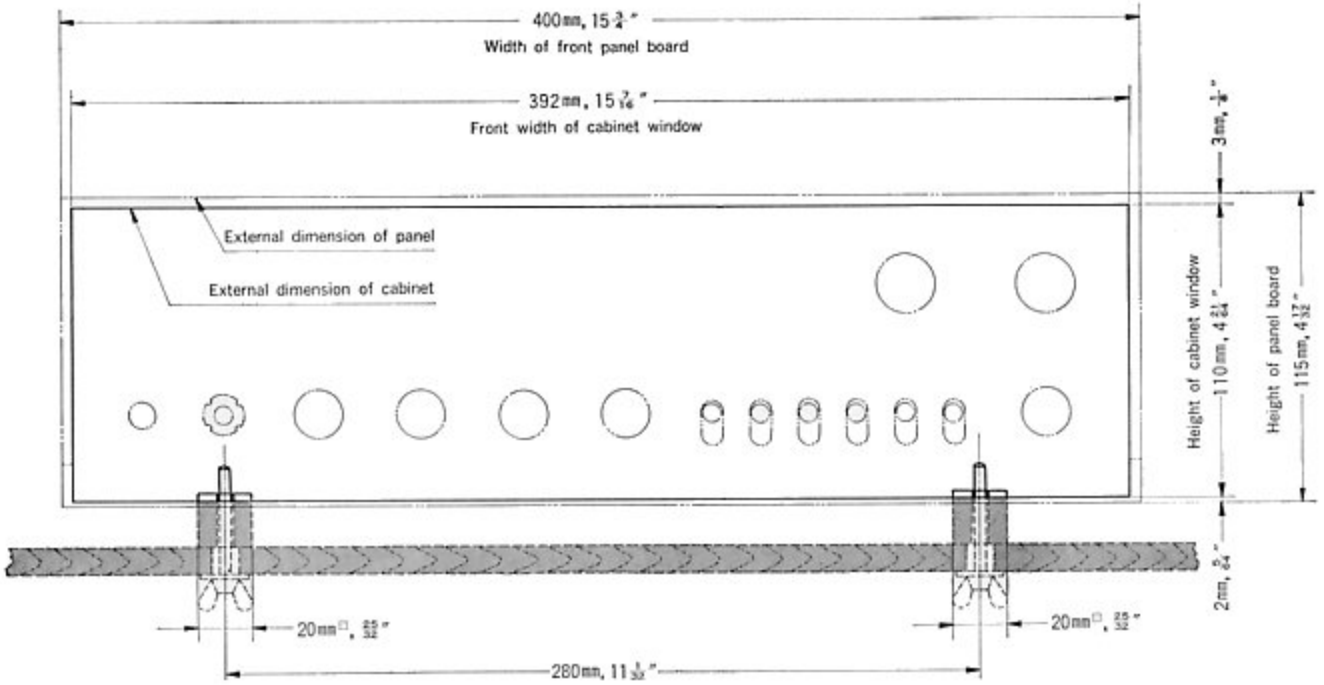
4. Remove the amplifier from the wood case (Refer to the section entitled "DISASSEMBLY PROCEDURE").

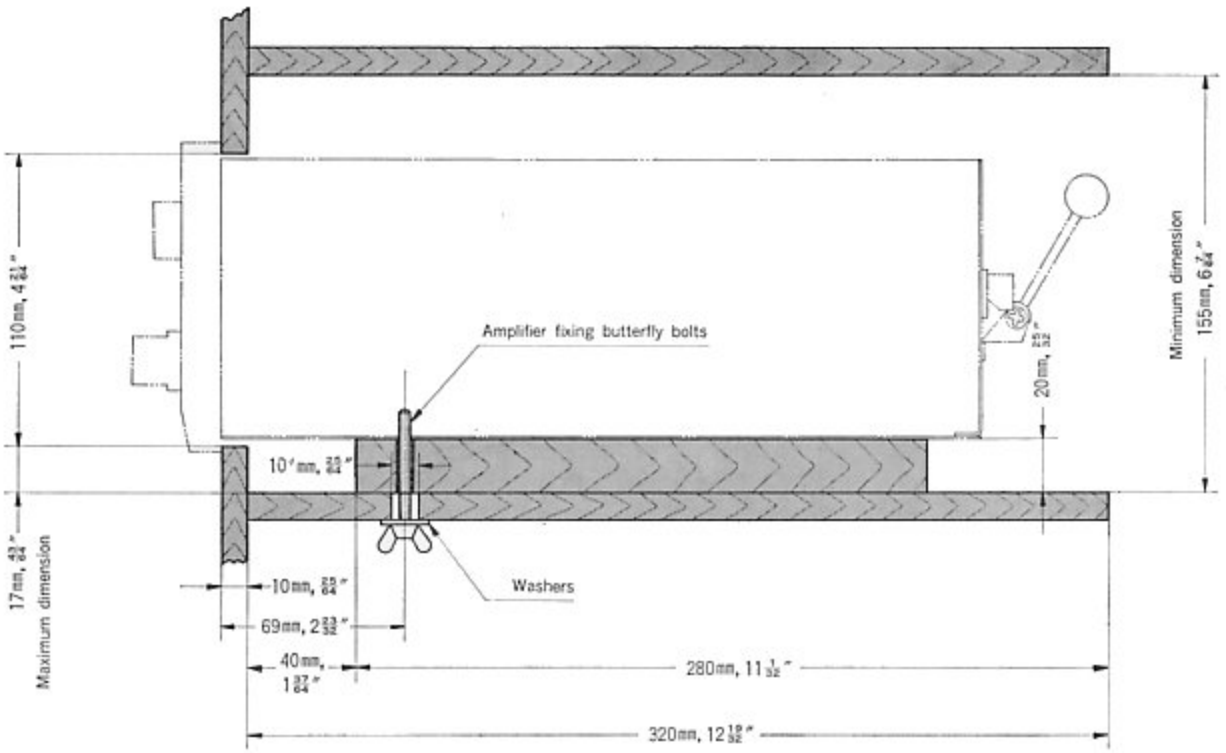
5. Place the amplifier in position through the cabinet window.

6. Make sure the amplifier is in position, then put the washers in butterfly bolts (4×40mm) and fix the amplifier to the cabinet with the butterfly bolts.

Note: When the amplifier is built into the custom cabinet, the wood case assembly including screws and washers is not used. Retain it for future use.

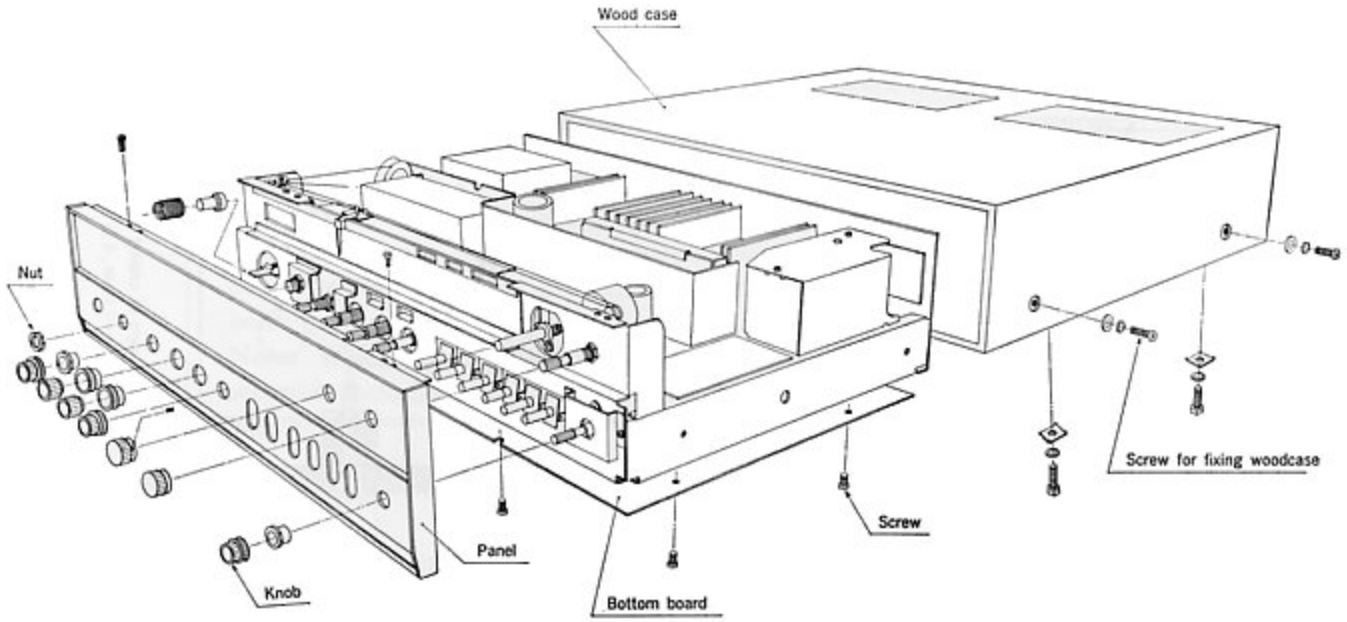



400mm, 15 3/4"
Width of front panel board
392mm, 15 7/16"
Front width of cabinet window
3mm, 1/8"
External dimension of panel
External dimension of cabinet
Height of cabinet window
110mm, 4 21/64"
Height of panel board
115mm, 4 17/32"
2mm, 5/64"
20mm□, 25/32"
20mm□, 25/32"
280mm, 11 1/32"

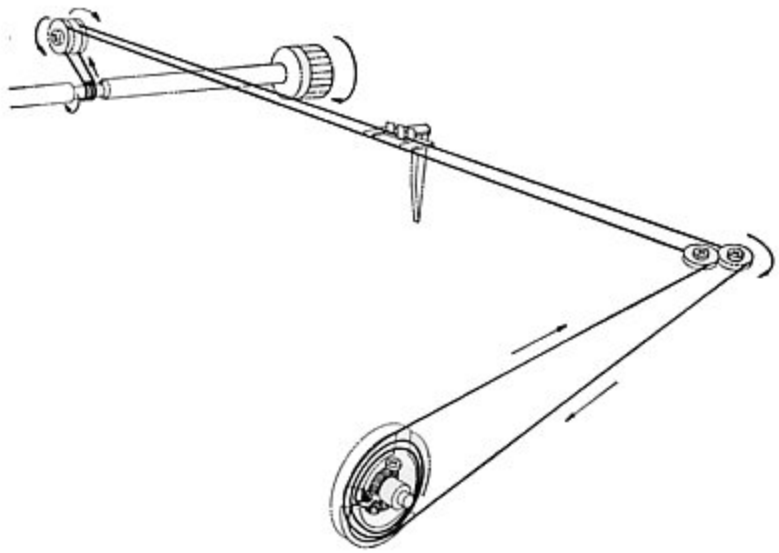

110mm, 4 21/64"
Amplifier fixing butterfly bolts
Minimum dimension
155mm, 6 7/64"
20mm, 25/32"
10mm, 25/32"
17mm, 43/64"
Maximum dimension
Washers
10mm, 25/64"
69mm, 2 23/32"
40mm, 1 37/64"
280mm, 11 1/32"
320mm, 12 19/32"

DISASSEMBLY PROCEDURE

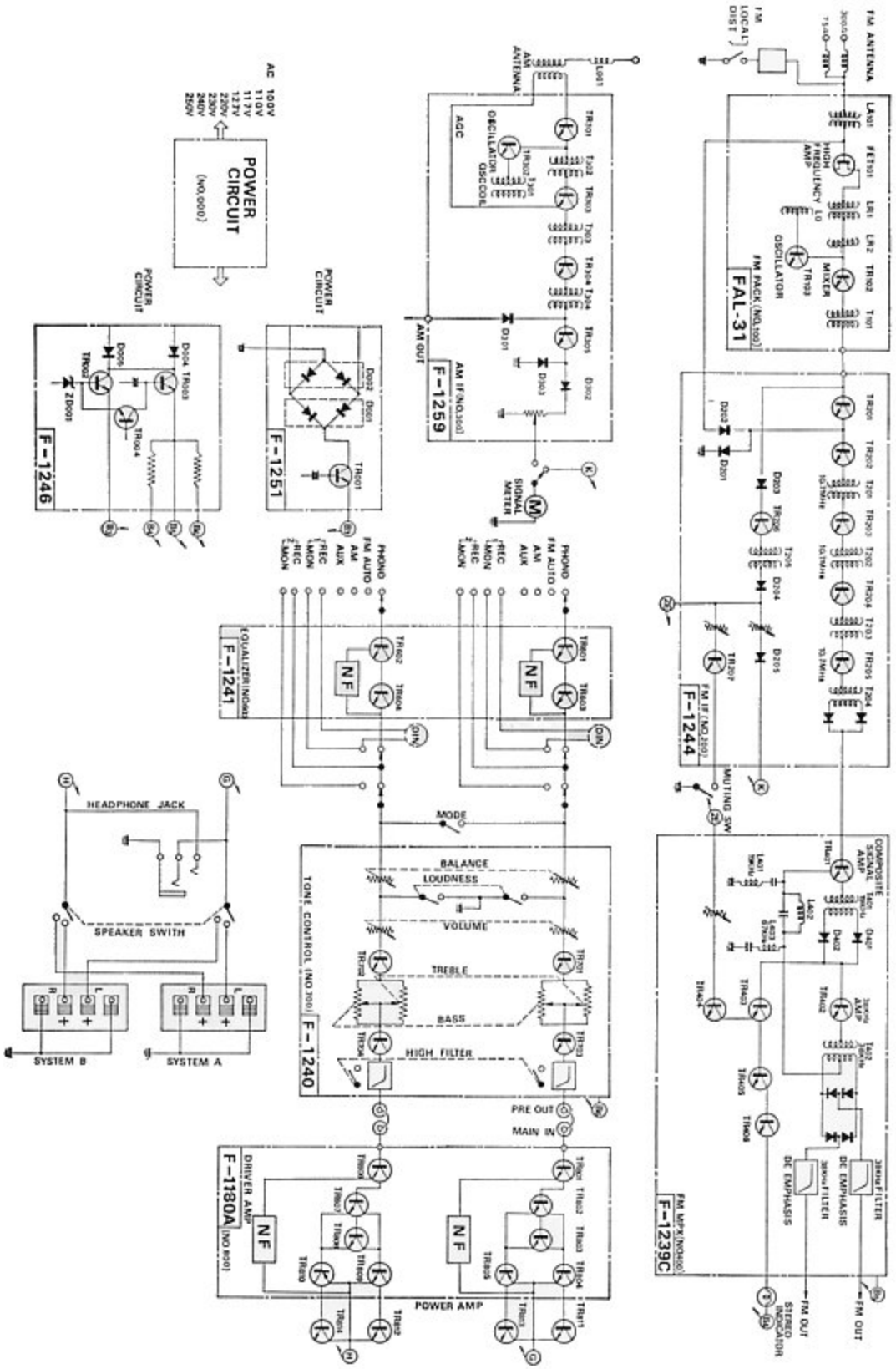
REMOVING THE FRONT PANEL, WOOD CASE AND BOTTOM PLATE



DIAL MECHANISM

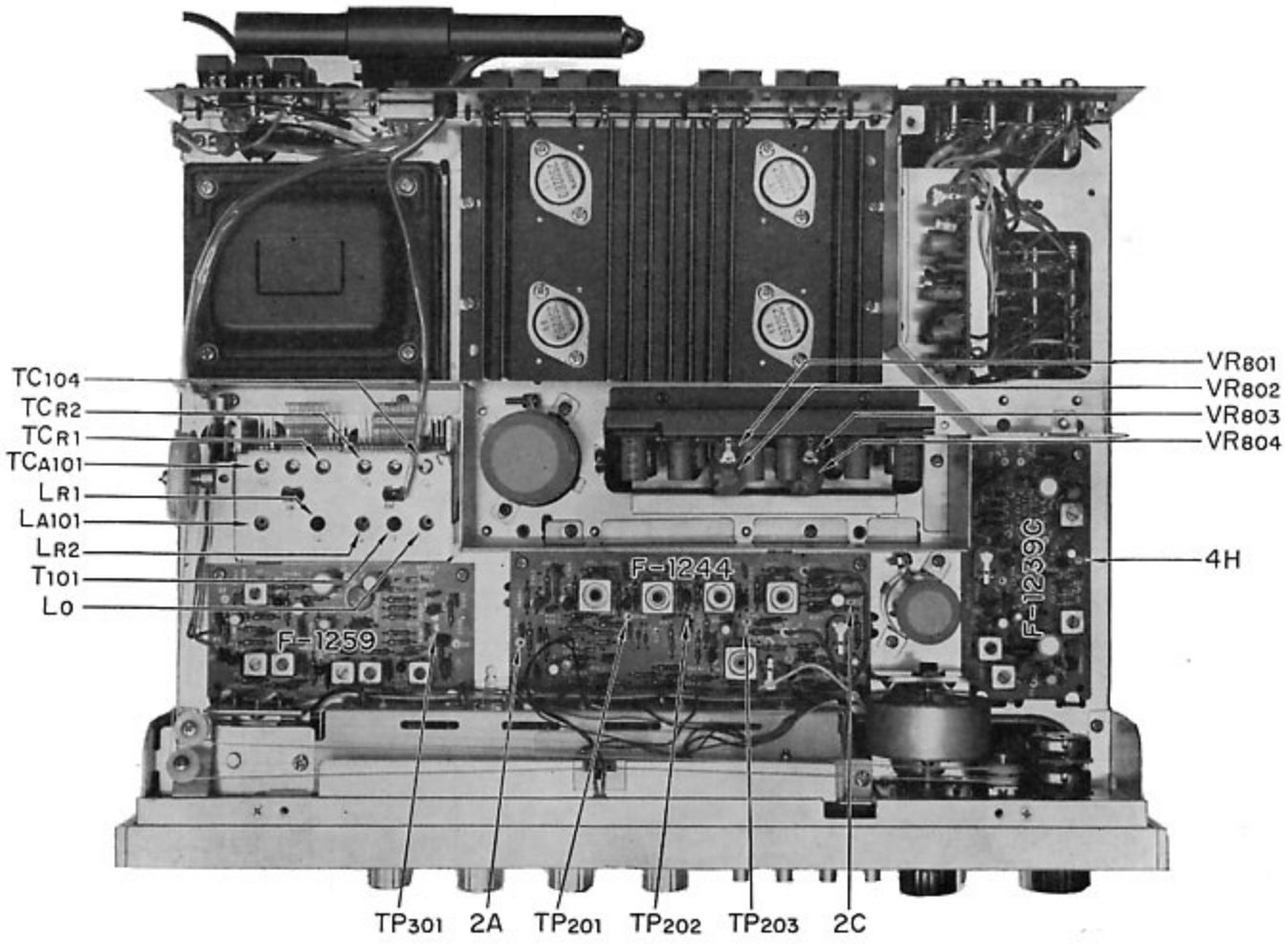


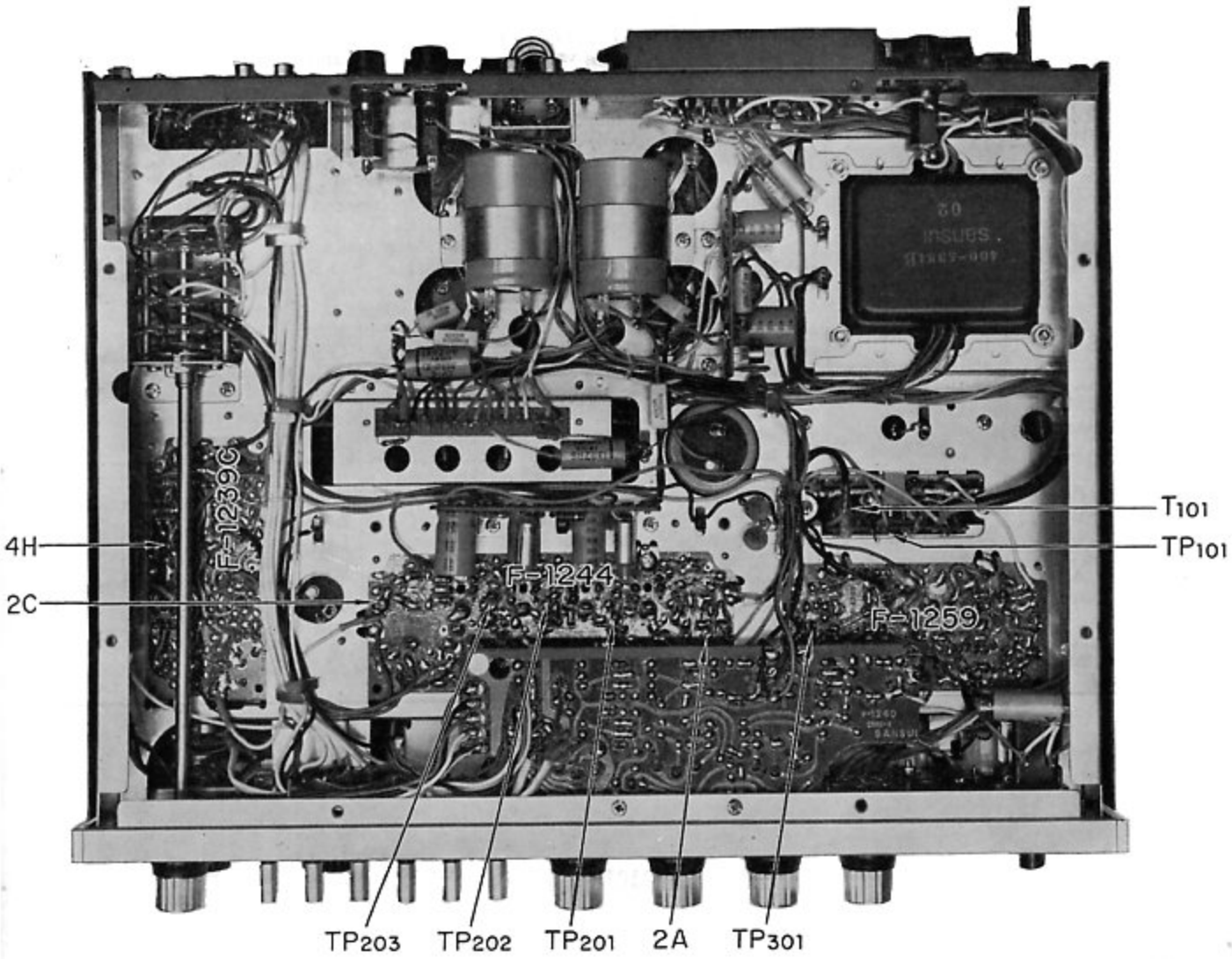
BLOCK DIAGRAM



ALIGNMENT

TEST POINTS




4H
2C
F-1239C
F-1244
F-1259
T101
TP101
TP203
TP202
TP201
2A
TP301

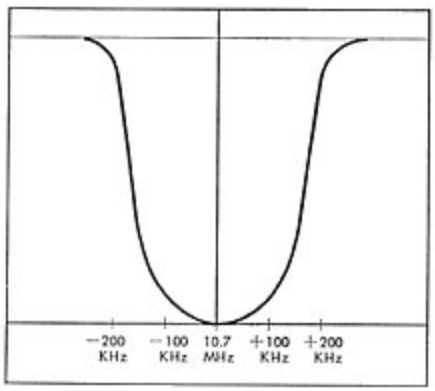
ALIGNMENT

FM ALIGNMENT PROCEDURE

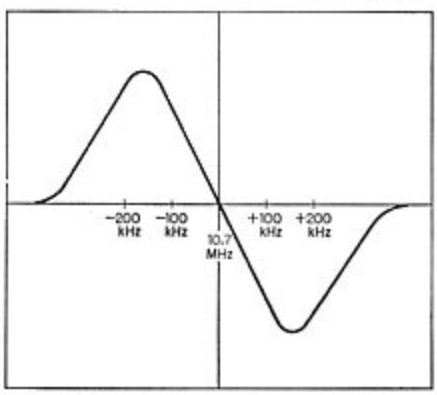
NOTE: To align, set the EM signal generator level to minimum turn tuning gang fully, center carrier wave, and set pointer to reference mark.

STEP	ALIGN	GENERATOR	FEED SIGNAL	OUTPUT INDICATOR	DIAL SETTING	ADJUST	ADJUST FOR
1.	IF Transformer	10.7 MHz ±200 kHz	Sweep signal is sent to TP_{101} via the 10pF ceramic capacitor	Oscilloscope is connected to TP_{201}, TP_{202} and TP_{203} via the 0.02μF ceramic capacitor		Primary and secondary sides of T_{201}, T_{202}, and T_{203}	Best I.F. wave form
2.	Discriminator	10.7 MHz ±200 kHz	Sweep signal is sent to 2A via the 0.02μF ceramic capacitor	Oscilloscope is connected to 2C via the 0.05μF capacitor		FM Discriminator T_{204} primary and secondary	S curve
3.	O.S.C	88 MHz 400 Hz 100% Modulation	To antenna terminals	Oscilloscope and V.T.V.M. at output load	88 MHz	O.S.C. coil L_0	Maximum
4.	O.S.C	108 MHz 400 Hz 100% Modulation	To antenna terminals	Oscilloscope and V.T.V.M. at output load	108 MHz	O.S.C trimmer TC_{104}	Maximum
5.	Repeat 3&4						
6.	RF Amp. Circuit	90 MHz 400 Hz 100% Modulation	To antenna terminals	Oscilloscope and V.T.V.M. at output load	90 MHz	Antenna Coil LA_{101}, LR_1 and LR_2	Maximum
7.	RF Amp. Circuit	106 MHz 400 Hz 100% Modulation	To antenna terminals	Oscilloscope and V.T.V.M. at output load	106 MHz	Trimmer TCA_{101}, TC_{R1} and TC_{R2}	Muximum
8.	Repeat 6 & 7						

FM IF CHARACTERISTIC



FM DISCRIMINATOR CHARACTERISTIC



FM MUITIPLEX ALIGNMENT PROCEDURE

1. Do not attempt to align the Multiplex Circuit unless the following equipment is available:

a. Multiplex Stereo Generator b. Oscilloscope c. AC. V.T.V.M. d. Audio Oscillator e. FM Signal Generator

STEP	ALIGN	GENERATOR	FEED SIGNAL	OUTPUT INDICATOR	ADJUST	ADJUST FOR
1.	19 kHz Trap	19 kHz Audio Signal	Connect to 4A	V.T.V.M. at 4G	L_{401}	Minimum
2.	67 kHz Trap	67 kHz Audio Signal	Connect to 4A	V.T.V.M. at 4G	L_{403}	Minimum
3.	19 kHz Transformer	FM Signal Gen. Modulated 30% by STEREO Gen. sub-channel	Antenna terminals Tune to signal	V.T.V.M. and Oscilloscope at 4H	T_{401}	Maximum
4.	38 kHz Transformer	FM Signal Gen. Modulated 30% by STEREO Gen.	Antenna terminals Tune to signal	V.T.V.M. and Oscilloscope at 4H	T_{402}	Maximum
5.	38 kHz Transformer and Separation VR	FM Signal Gen. Modulated 30% by STEREO Signal Gen. channel-L	Antenna terminals Tune to signal	V.T.V.M. and Oscilloscope at output load channel-R	T_{402} within ¼ turn and Separation VR (VR_{601})	Channel-R Minimum

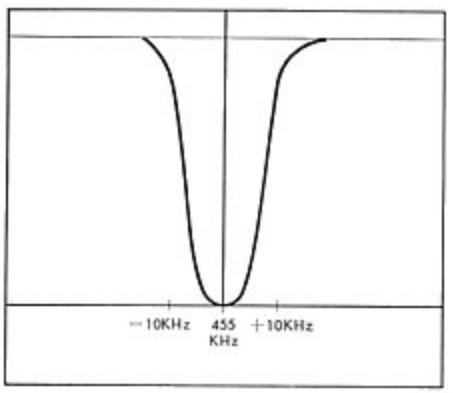
ALIGNMENT

AM ALIGNMENT PROCEDURE

NOTE: To aligh, set AM Signal Generator level to minimum.

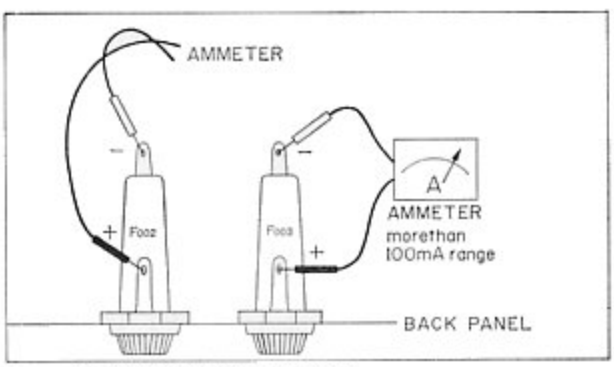
STEP	ALIGN	GENERATOR	FEED SIGNAL	OUTPUT INDICATOR	DIAL SETTING	ADJUST	ADJUST FOR
1.	I.F. Trasformer	455 kHz ±30 kHz Sweep-generator	Antenna terminals	Oscilloscope and V.T.V.M. is connected to TP_{301}		Primary and secondary sides from the lst I.F.T.(T_{302}~T_{304})	Best I.F. wave form
2.	O.S.C.	AM-generator 600 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	600 kHz	O.S.C. Coil T_{301}	Maximum
3.	O.S.C.	AM-generator 1400 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	1400kHz	O.S.C. Trimmer TC_{302}	Maximum
4.	Repeat 2 and 3						
5.	Antenna circuit	AM-generator 600 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	600 kHz	Ferrite bar Antenna coil T_{002}	Maximum
6.	Antenna circuit	AM-generator 1400 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	1400kHz	Antenna circuit Trimmer TC_{301}	Maximum
7.	Repeat 5 and 6						

AM IF CHARACTERISTIC



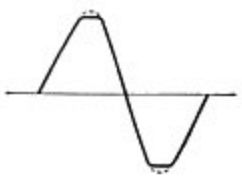
1. CURRENT ADJUSTMENT

STEP	SETTING OF AMMETER (TESTER)	WAHT TO DO	NOTE
1.		Remove F_{002} and F_{003}.	Use an ammeter having 100 or 50mA range.
2.		Set VR_{802} and VR_{804} to minimum.	
3.		Set VR_{703} and VR_{704} (VOLUME) to minimum.	
4.		Push the POWER switch ON.	Be sure to switch on lst and then connect the ammeter.
5.	100mA range.	Connect the ammeter to F_{002} as illustrated in Fig. 1.	
6.		Turn VR_{802} clockwise and adjust current to 15mA.	
7.	100mA range.	Push the POWER switch OFF and attach F_{002} in place.	
8.		Push the POWER switch ON and connect the ammeter to F_{003} as illustrated in Fig. 1.	
9.		Turn VR_{804} clockwise and adjust current to 15	
10.		Attach F_{003} in place.	

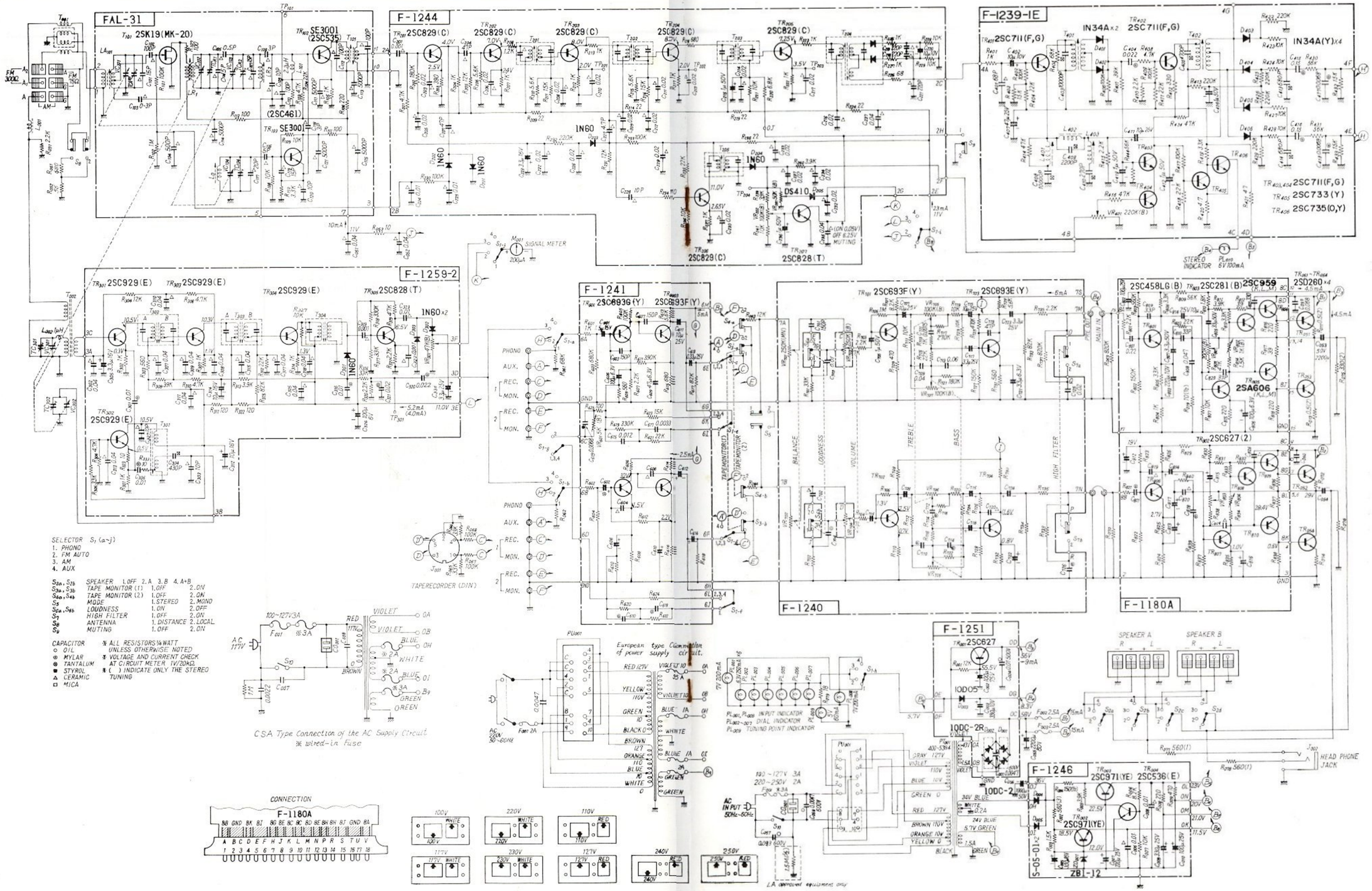


QUICK ACTING FUSE HOLDER

2. OUTPUT ADJUSTMENT

STEP	WHAT TO DO	NOTE
1.	Adjust the volume control to minimum.	
2.	Set an oscillator to 1,000Hz and connect it to the LEFT AUX input.	The oscillator used should have the oscillation frequency of 20 to 20,000Hz and the output voltage of more than 200mV.
3.	Set the SELECTOR switch to AUX.	Set other controls and switches as follows: BALANCE to CENTER TAPE MON to OFF MODE to STEREO TONE to CENTER Others to OFF
4.	Connect an 8– or 16-ohm load resistor having capacitor of more than 50 watts to the LEFT SPEAKER output.	
5.	Connect an osscilloscope to the SPEAKER terminal.	
6.	Push the POWER switch on and advance the volume little by little. Check the output at the terminal by means of the oscilloscope.	
7.	Adjust VR_{801} so that the fronts of sine wave are clipped simultaneously	
8.	Adjust the right channel as above. In Step 7, adjust VR_{803}.	

SCHEMATIC DIAGRAM



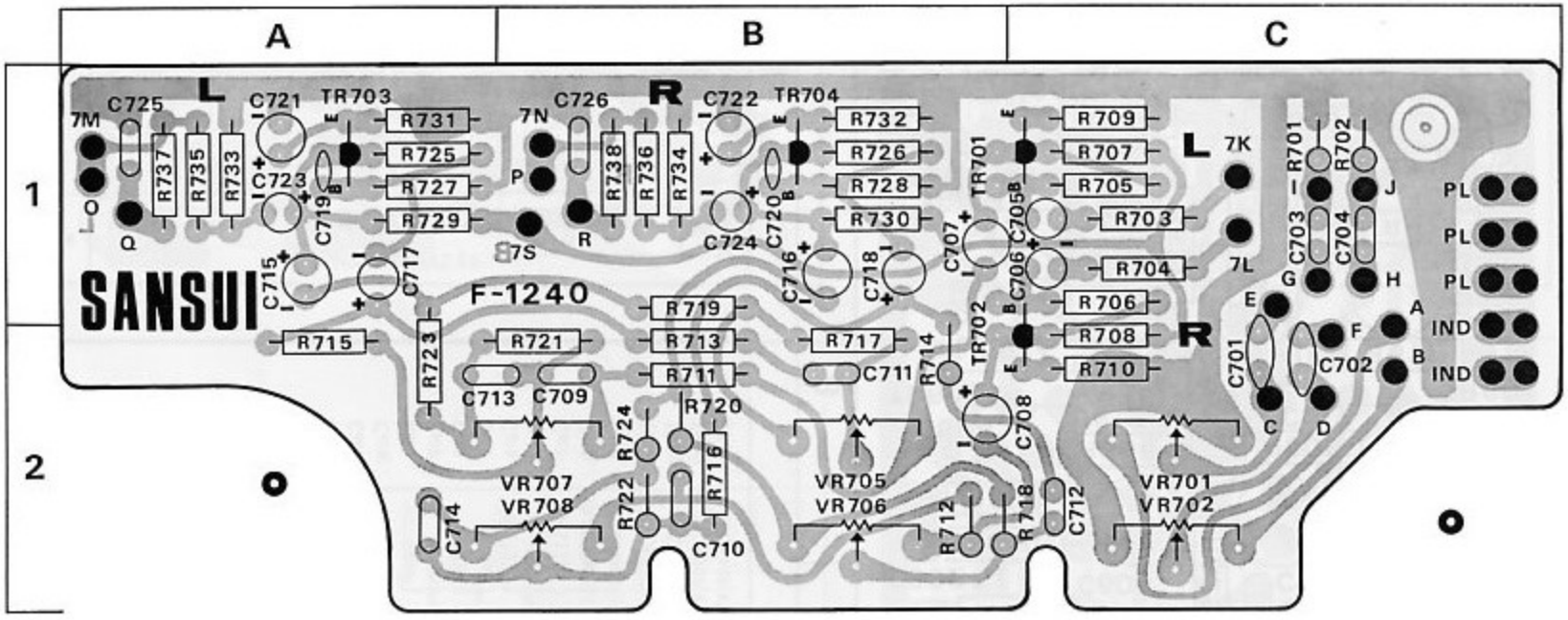
PRINTED CIRCUIT BOARDS AND PARTS LIST

X: Parts No. **Y:** Parts Name **Z:** Position of Parts

TONE CONTROL BLOCK ⟨F-1240⟩

X	Y	Z
R701	33kΩ	1C
R702	33kΩ	1C
R703	2.2kΩ	1C
R704	2.2kΩ	1C
R705	1MΩ	1C
R706	1MΩ	1C
R707	8.2kΩ	1C
R708	8.2kΩ	2C
R709	470Ω	1C
R710	470Ω	2C
R711	10kΩ	2B
R712	10kΩ	2B
R713	1kΩ	2B
R714	1kΩ	2B
R715	22kΩ	2A
R716	22kΩ	2B
R717	270kΩ	2B
R718	270kΩ	2B, C
R719	10kΩ ±10% ¼W Carbon Resistor	1B
R720	10kΩ	2B
R721	180kΩ	2A, B
R722	180kΩ	2B
R723	10kΩ	1, 2A
R724	10kΩ	2B
R725	470kΩ	1A
R726	470kΩ	1B
R727	150kΩ	1A
R728	150kΩ	1B
R729	5.6kΩ	1A
R730	5.6kΩ	1B
R731	560Ω	1A
R732	560Ω	1B
R733	82kΩ	1A
R734	82kΩ	1B
R735	2.2kΩ	1A
R736	2.2kΩ	1B
R737	820kΩ	1A
R738	820kΩ	1B
VR701,702	250kΩ(MN) Balance Control (101040)	2C
VR705,706	100kΩ(B)×2 Treble Control (102004)	2B
VR707,708	100kΩ(B)×2 Bass Control (102004)	2A, B
C701	150pF ±10% 50 WV Ceramic Capacitor	2C
C702	150pF ±10% 50 WV Ceramic Capacitor	2C
C703	0.01μF ±10% 50 WV Mylar Capacitor	1C
C704	0.01μF ±10% 50 WV Mylar Capacitor	1C
C705	1μF 50 WV Electrolytic Capacitor	1C
C706	1μF 50 WV Electrolytic Capacitor	1C
C707	10μF 25 WV Electrolytic Capacitor	1B
C708	10μF 25 WV Electrolytic Capacitor	2B
C709	0.04μF	2B
C710	0.04μF	2B
C711	0.0015μF ±10% 50 WV Mylar Capacitor	2B
C712	0.0015μF ±10% 50 WV Mylar Capacitor	2C
C713	0.06μF	2A, B
C714	0.06μF	2A

X	Y	Z
C715	10μF 25 WV Electrolytic Capacitor	1A
C716	10μF 25 WV Electrolytic Capacitor	1B
C717	3.3μF 25 WV Electrolytic Capacitor	1A
C718	3.3μF 25 WV Electrolytic Capacitor	1B
C719	47pF ±10% 50 WV Ceramic Capacitor	1A
C720	47pF ±10% 50 WV Ceramic Capacitor	1B
C721	33μF 6.3 WV Electrolytic Capacitor	1A
C722	33μF 6.3 WV Electrolytic Capacitor	1B
C723	3.3μF 25 WV Electrolytic Capacitor	1A
C724	3.3μF 25 WV Electrolytic Capacitor	1B
C725	0.02μF ±10% 50 WV Mylar Capacitor	1A
C726	0.02μF ±10% 50 WV Mylar Capacitor	1B
TR701	2SC693F(Y) (030575-1)	1B
TR702	2SC693F(Y) (030575-1)	1, 2C
TR703	2SC693E(Y) (030575)	1A
TR704	2SC693E(Y) (030575)	1B


A
B
C
1
2
L
R
SANSUI
F-1240
7M
7N
7S
7K
7L
P
Q
R
C725
C721
C722
C726
C723
C724
C715
C716
C717
C718
C719
C720
C705
C706
C707
C708
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C712
C713
C714
TR703
TR704
TR701
TR702
R731
R725
R727
R729
R732
R726
R728
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VR707
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VR701
VR702
C703
C704
R701
R702
C701
C702
E
G
H
J
F
A
B
C
D
PL
PL
PL
IND
IND

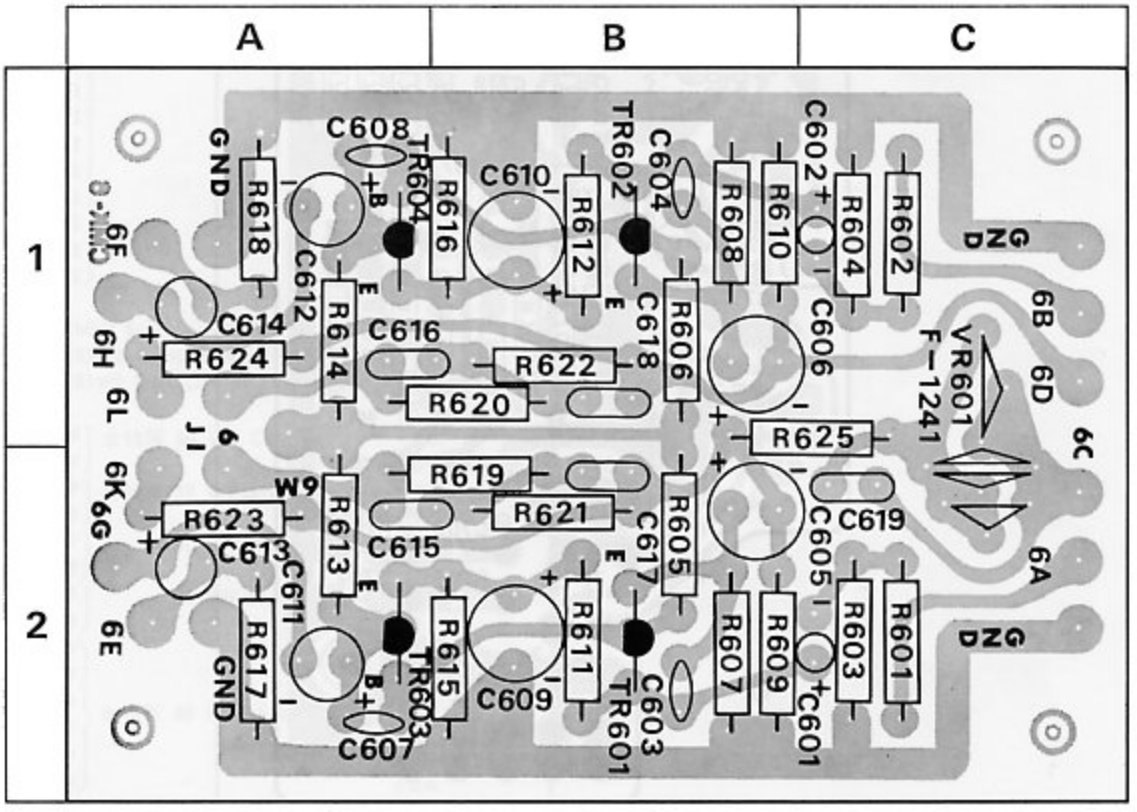
PRINTED CIRCUIT BOARDS AND PARTS LIST

X: Parts No. **Y:** Parts Name **Z:** Position of Parts

EQUALIZER AMP BLOCK ⟨F-1241⟩

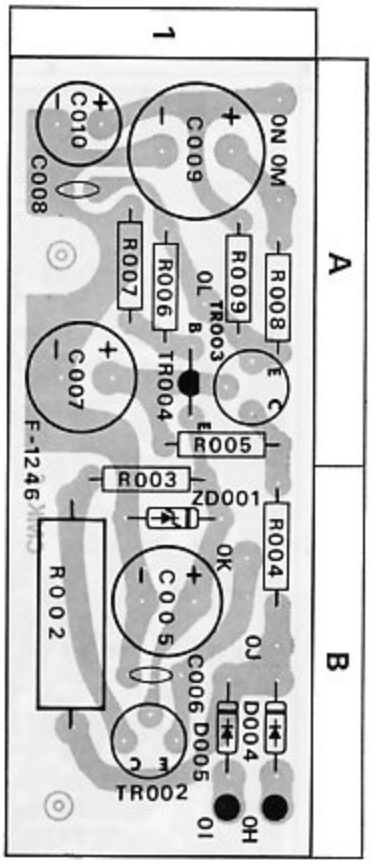
X	Y	Z
R601	1kΩ	2C
R602	1kΩ	1C
R603	680kΩ	2C
R604	680kΩ	1C
R605	100kΩ	2B
R606	100kΩ	1B
R607	2.2kΩ	2B
R608	2.2kΩ	1B
R609	560Ω	2B
R610	560Ω	1B
R611	390kΩ	2B
R612	390kΩ	1B
R613	5.6kΩ ±10% ¼W Carbon Resistor	2A
R614	5.6kΩ	1A
R615	680Ω	2B
R616	680Ω	1B
R617	82kΩ	2A
R618	82kΩ	1A
R619	330kΩ	2A, B
R620	330kΩ	1A, B
R621	22kΩ	2B
R622	22kΩ	1B
R623	15kΩ	2A
R624	15kΩ	1A
R625	100Ω	1B, C

X	Y	Z
VR601	5kΩ(B) (103037)	1C
C601	1.5μF 15 WV Tantalume Capacitor	2C
C602	1.5μF	1C
C603	150pF ±10% 50 WV Ceramic Capacitor	2B
C604	150pF	1B
C605	100μF 6.3 WV Electrolytic Capacitor	2B, C
C606	100μF	1B, C
C607	150pF ±10% 50 WV Ceramic Capacitor	2A
C608	150pF	1A
C609	47μF 6.3 WV Electrolytic Capacitor	2B
C610	47μF	1B
C611	10μF 25 WV Alum. Electrolytic Capacitor	2A
C612	10μF	1A
C613	0.33μF 25 WV Electrolytic Capacitor	2A
C614	0.33μF	1A
C615	0.012μF ±10% 50 WV Mylar Capacitor	2A, B
C616	0.012μF	1A, B
C617	0.0033μF	2B
C618	0.0033μF	1B
C619	0.0068μF	2C
TR601	2SC693G(Y) (030575-2)	2B
TR602	2SC693G(Y)	1B
TR603	2SC693F(Y) (030575-1)	2A
TR604	2SC693F(Y)	1A



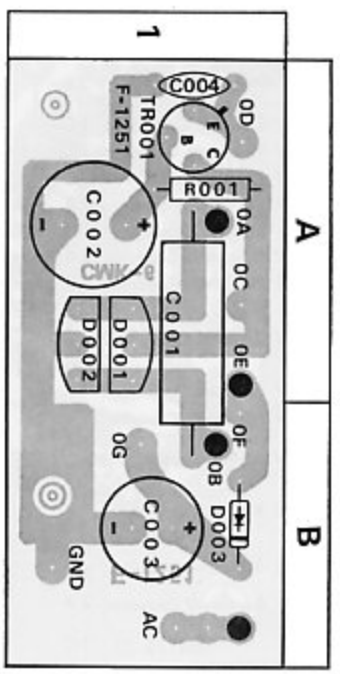
LIPPLE FILTER BLOCK ⟨F-1246⟩

X	Y	Z
R002	560Ω ±10% 3W Cement Resistor	1 B
R003	1.5kΩ ±10% ¼W Carbon Resistor	1 B
R004	150Ω ±10% ½W Solid Resistor	1 B
R005	3.9kΩ	1 A
R006	8.2kΩ	1 A
R007	10kΩ ±10% ¼W Carbon Resistor	1 A
R008	220Ω	1 A
R009	470Ω	1 A
C005	330μF 16 WV Eletrolytic Capacitor	1 B
C006	0.01μF $^{+100}_{-0}$% 50 WV Ceramic Capacitor	1 B
C007	220μF 25 WV Electrolytic Capacitor	1 A
C008	0.01μF $^{+100}_{-0}$% 50 WV Ceramic Capacitor	1 A
C009	330μF 25 WV Electrolytic Capacitor	1 A
C010	100μF	1 A
TR002	2SC971(Y) (030553, -1)	1 B
TR003	2SC971(Y) (030553, -1)	1 A
TR004	2SC536(E) (030515-4)	1 A
D004	S-05-01 or 10D-1 (031077) (031034)	1 B
D005	S-05-01 or 10D-1 (031077) (031034)	1 B
ZD001	ZB1-12 (031064-1)	1 B



POWER BLOCK ⟨F-1251⟩

X	Y	Z
R001	12kΩ ±10% ¼W Carbon Resistor	1 A
C001	0.0047μF ±10% 600WV Oil Capacitor	1 A, B
C002	100μF 75 WV Electrolytic Capacitor	1 A
C003	330μF 10 WV Electrolytic Capacitor	1 B
C004	0.01μF 500WV Ceramic Capacitor	1 A
TR001	2SC627 (1～3) (030558, -1, -2)	1 A
D001	10DC-2 (031080)	1 A
D002	10DC-2R (031080-1)	1 A
D003	10D05 (0310880)	1 B



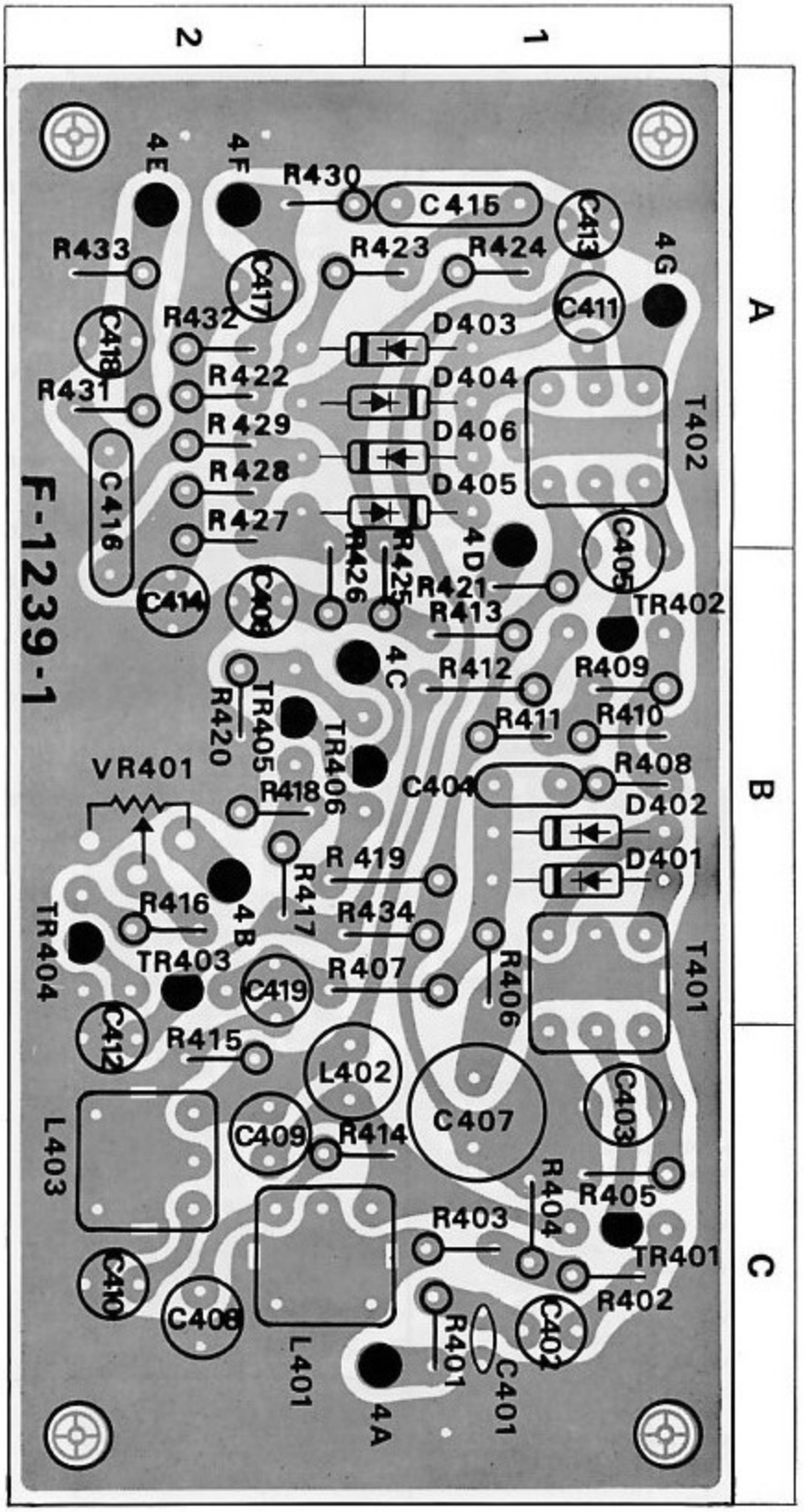
PRINTED CIRCUIT BOARDS AND PARTS LIST

X: Parts No. **Y:** Parts Name **Z:** Position of Parts

FM MPX. BLOCK ⟨F-1239-1E⟩

X	Y	Z
R401	1kΩ	1 C
R402	100kΩ	1 C
R403	15kΩ	1 C
R404	22kΩ	1 C
R405	68kΩ	1 C
R406	100kΩ	1 B
R407	100kΩ	1, 2 B
R408	4.7kΩ	1 B
R409	100kΩ	1 B
R410	2.2kΩ	1 B
R411	22kΩ	1 B
R412	330Ω	1 B
R413	220kΩ	1 B
R414	47kΩ	1, 2 C
R415	2.2kΩ	2 C
R416	47kΩ	2 B
R417	22kΩ ±10% ¼W Carbon Resistor	2 B
R418	22kΩ	2 B
R419	3.3kΩ	1, 2 B
R420	4.7Ω	2 B
R421	47Ω	1 B
R422	220kΩ	2 A
R423	10kΩ	1, 2 A
R424	10kΩ	1 A
R425	220kΩ	1 B
R426	220kΩ	2 B
R427	10kΩ	2 A
R428	10kΩ	2 A
R429	220kΩ	2 A
R430	56kΩ	2 A
R431	56kΩ	2 A
R432	15kΩ	2 A
R433	15kΩ	2 A
R434	47kΩ	1, 2 B
VR401	200kΩ (B) Indicator Adjust (1032150)	2 B
C401	68 pF ±10% 50 WV Ceramic Capacitor	1 C
C402	10μF 10 WV Electrolytic Capacitor	1 C
C403	0.01μF ± 5% 50 WV Styrol Capacitor	1 C
C404	0.022μF ±10% 50 WV Mylar Capacitor	1 B
C405	4700 pF ± 5% 50 WV Styrol Capacitor	1 A, B
C406	1μF 50 WV Electrolytic Capacitor	2 B
C407	47μF 25 WV Electrolytic Capacitor	1 C
C408	0.01μF	2 C
C409	2200 pF ± 5% 50 WV Styrol Capacitor	2 C
C410	270 pF	2 C
C411	10μF 25 WV Electrolytic Capacitor	1 A
C412	1μF 50 WV Electrolytic Capacitor	2 C
C413	680 pF	1 A
C414	680 pF ± 5% 50 WV Styrol Capacitor	2 B
C415	0.15μF	1 A
C416	0.15μF ±10% 50 WV Mylar Capacitor	2 A
C417	6800 pF	2 A
C418	6800 pF ± 5% 50 WV Styrol Capacitor	2 A
C419	1μF 50 WV Electrolytic Capacitor	2 A
TR401	2SC711 (F, G) (035732, 3)	1 C

X	Y		Z
TR402	2SC711 F, G)	(0305732, 3)	1 B
TR403		(0305732, 3)	2 B
TR404		(0305732, 3)	2 B
TR405	2SC733 (Y)	(0305371)	2 B
TR406	2SC735 (O, Y)	(0305640, 1)	1, 2 B
D401	IN34A	(0310400)	1 B
D402		(0310400)	1 B
D403	IN34A (Y)	(0310401)	1 A
D404		(0310401)	1 A
D405		(0310401)	1 A
D406		(0310401)	1 A
T401	19kHz Coil	(4240580)	1 B
T402	38kHz Coil	(4240600)	1 A
L401	19kHz Coil	(4240590)	2 C
L402	Micro Inductor	(4900100)	1, 2 C
L403	67kHz Coil	(4240410)	2 C


2
1
A
B
C
F-1239-1
4E
4F
4G
4D
4C
4B
4A
R430
C415
C413
R433
R423
R424
C417
C411
R432
D403
C418
R422
D404
R431
R429
D406
T402
R428
D405
C416
R427
R426
R425
C405
R421
TR402
C414
C408
R413
R412
R409
R420
TR405
TR406
R411
R410
VR401
R418
C404
R408
D402
R419
D401
R417
R416
R434
TR404
TR403
R407
R406
T401
C419
C412
R415
L402
C407
C403
L403
C409
R414
R404
R405
R403
TR401
C410
C406
R402
R401
C402
L401
C401

PRINTED CIRCUIT BOARDS AND PARTS LIST

X: Parts No. **Y:** Parts Name **Z:** Position of Parts

FM IF BLOCK ⟨F-1244⟩

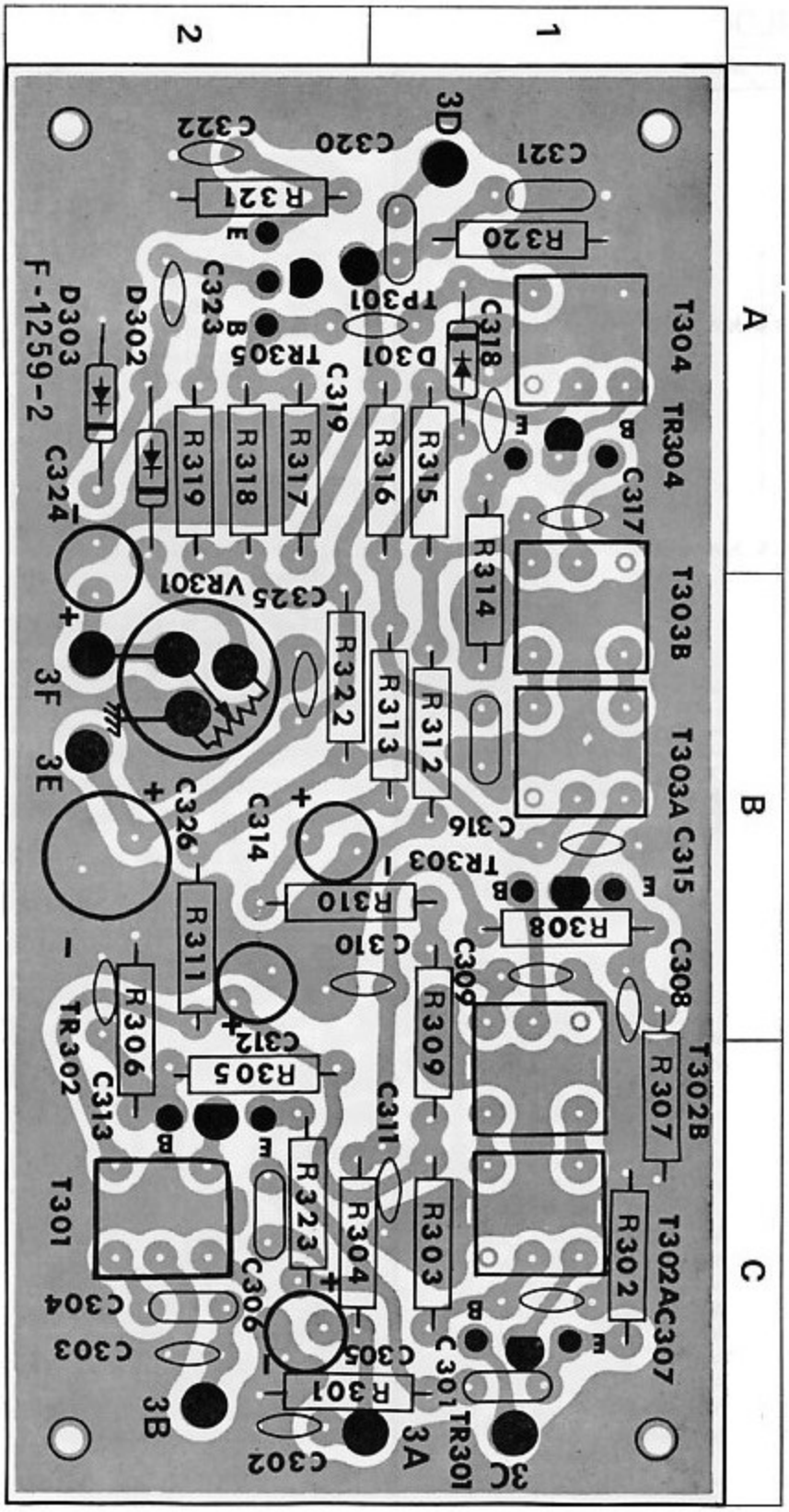
X	Y	Z
R201	4.7kΩ ±10% 1/4W Carbon Resistor	1, 2 D
R202	180kΩ ±10% 1/4W Carbon Resistor	2 D
R203	390Ω ±10% 1/4W Carbon Resistor	1 D
R204	1kΩ ±10% 1/4W Carbon Resistor	2 D
R205	12kΩ ±10% 1/4W Carbon Resistor	2 D
R206	5.6kΩ ±10% 1/4W Carbon Resistor	1 D
R207	1kΩ ±10% 1/4W Carbon Resistor	2 D
R208	1.2kΩ ±10% 1/4W Carbon Resistor	2 D
R209	22Ω ±10% 1/4W Carbon Resistor	2 C, D
R210	5.6kΩ ±10% 1/4W Carbon Resistor	1 C, D
R211	15kΩ ±10% 1/4W Carbon Resistor	2 C
R212	1kΩ ±10% 1/4W Carbon Resistor	2 C, D
R213	1kΩ ±10% 1/4W Carbon Resistor	2 C
R214	22Ω ±10% 1/4W Carbon Resistor	2 C
R215	5.6kΩ ±10% 1/4W Carbon Resistor	1 C
R216	15kΩ ±10% 1/4W Carbon Resistor	2 C
R217	1kΩ ±10% 1/4W Carbon Resistor	1 C
R218	680Ω ±10% 1/4W Carbon Resistor	2 B
R219	22Ω ±10% 1/4W Carbon Resistor	2 B
R220	6.8kΩ ±10% 1/4W Carbon Resistor	1 A, B
R221	10kΩ(B) Tuning Meter Adjustor (103020)	2 B
R222	1kΩ ±10% 1/4W Carbon Resistor	2 A, B
R223	1kΩ ±10% 1/4W Carbon Resistor	2 B
R224	22Ω ±10% 1/4W Carbon Resistor	2 A, 2 B
R225	1kΩ ±10% 1/4W Carbon Resistor	2 A
R226	68Ω ±10% 1/4W Carbon Resistor	2 A
R227	1kΩ ±10% 1/4W Carbon Resistor	2 A
R228	10kΩ ±10% 1/4W Carbon Resistor	2 A
R229	10kΩ ±10% 1/4W Carbon Resistor	2 A
R230	100kΩ ±10% 1/4W Carbon Resistor	1 D
R231	12kΩ ±10% 1/4W Carbon Resistor	1 C
R232	220kΩ ±10% 1/4W Carbon Resistor	1 D
R233	100kΩ ±10% 1/4W Carbon Resistor	1 C
R234	10Ω ±10% 1/4W Carbon Resistor	1 C
R235	22kΩ ±10% 1/4W Carbon Resistor	1 B, C
R236	10kΩ ±10% 1/4W Carbon Resistor	1 B
R237	1kΩ ±10% 1/4W Carbon Resistor	1, 2 B
R238	22Ω ±10% 1/4W Carbon Resistor	1 B
R239	3.9kΩ ±10% 1/4W Carbon Resistor	1 A
R240	3.9kΩ ±10% 1/4W Carbon Resistor	1 A
R241	10kΩ ±10% 1/4W Carbon Resistor	1, 2 A
VR201	50kΩ(B) Tuning Meter Adjustor (103020)	1 B
VR202	100kΩ(B) Muting Adjustor (103034)	1 A
C201	1000 pF +80 −20% 25 WV Ceramic Capacitor	1, 2 D
C203	0.02μF +80 −20% 25 WV Ceramic Capacitor	1 D
C204	47 pF ±10% 50 WV Ceramic Capacitor	2 D
C205	0.02μF +80 −20% 25 WV Ceramic Capacitor	2 D
C206	0.02μF +80 −20% 25 WV Ceramic Capacitor	2 D
C207	47 pF ±10% 50 WV Ceramic Capacitor	1 D
C208	0.02μF +80 −20% 25 WV Ceramic Capacitor	2 C
C209	0.02μF +80 −20% 25 WV Ceramic Capacitor	2 C
C210	0.02μF +80 −20% 25 WV Ceramic Capacitor	1 C
C211	0.02μF +80 −20% 25 WV Ceramic Capacitor	2 C
C212	0.02μF +80 −20% 25 WV Ceramic Capacitor	2 C
C213	0.02μF +80 −20% 25 WV Ceramic Capacitor	1, 2 B
C214	0.02μF +80 −20% 25 WV Ceramic Capacitor	2 B
C215	1μF 50 WV Electrolytic Capacitor	1, 2 B
C216	0.02μF +80 −20% 25 WV Ceramic Capacitor	2 B
C217	0.02μF +80 −20% 25 WV Ceramic Capacitor	1, 2 B
C218	220 pF ±10% 50 WV Ceramic Capacitor	2 A
C219	220 pF ±10% 50 WV Ceramic Capacitor	2 A
C220	10μF 10 WV Electrolytic Capacitor	2 A
C221	220 pF ±10% 50 WV Ceramic Capacitor	2 A
C222	0.02μF +80 −20% 25 WV Ceramic Capacitor	1 D
C223	3.3μF 16 WV Electrolytic Capacitor	1 D
C224	0.01μF +80 −20% 25 WV Ceramic Capacitor	1 D
C225	0.01μF +80 −20% 25 WV Ceramic Capacitor	1 C
C226	0.02μF +80 −20% 25 WV Ceramic Capacitor	1 C, D
C227	4.7 pF ±10% 50 WV Ceramic Capacitor	1 C
C228	10 pF ±10% 50 WV Ceramic Capacitor	1 C
C229	0.02μF +80 −20% 25 WV Ceramic Capacitor	1 C
C230	0.02μF +80 −20% 25 WV Ceramic Capacitor	1 B
C231	0.02μF +80 −20% 25 WV Ceramic Capacitor	1 A
C232	0.02μF +80 −20% 25 WV Ceramic Capacitor	1 A
C233	0.02μF +80 −20% 25 WV Ceramic Capacitor	1 A
C234	0.02μF +80 −20% 25 WV Ceramic Capacitor	1 A
C235	0.04μF +80 −20% 25 WV Ceramic Capacitor	1 A
C236	1μF 50 WV Electrolytic Capacitor	1 A
C237	0.04μF +80 −20% 25 WV Ceramic Capacitor	2 A
TR201	2SC829(C) (030546-1)	2 D
TR202	2SC829(C) (030546-1)	2 D
TR203	2SC829(C) (030546-1)	2 C
TR204	2SC829(C) (030546-1)	2 C
TR205	2SC829(C) (030546-1)	2 B
TR206	2SC829(C) (030546-1)	1 B
TR207	2SC828(T) (030527)	1 A
D201	IN60 (031033, -1)	1 C, D
D202	IN60 (031033, -1)	1 C, D
D203	IN60 (031033, -1)	1 C
D204	IN60 (031033, -1)	1 A, B
D205	DS410 (034003)	1 A
T201	FM IFT 10.7MHz (423543)	2 C, D
T202	FM IFT 10.7MHz (423543)	2 C
T203	FM IFT 10.7MHz (423542)	2 B
T204	FM Detector 10.7MHz (423518)	2 A, B
T205	FM Meter Transformer (423529)	1 B

PRINTED CIRCUIT BOARDS AND PARTS LIST

X: Parts No. **Y:** Parts Name **Z:** Position of Parts

AM IF BLOCK ⟨F-1259-2⟩

X	Y	Z
R301	1kΩ	1, 2 C
R302	1kΩ	1 C
R303	560Ω	1 C
R304	12kΩ	2 C
R305	36kΩ	2 C
R306	4.7kΩ	2 B, C
R307	1kΩ	1 B, C
R308	4.7kΩ	1 B
R309	39kΩ	1 B, C
R310	4.7kΩ	1, 2 B
R311	120Ω	2 B
R312	22kΩ ±10% ¼W Carbon Resistor	1 B
R313	3.9kΩ	1 B
R314	1kΩ	1 A, B
R315	82kΩ	1 A
R316	33kΩ	1 A
R317	33kΩ	2 A
R318	330kΩ	2 A
R319	4.7kΩ	2 A
R320	2.2kΩ	1 A
R321	2.2kΩ	2 A
R322	120Ω	2 B
R323	10Ω	2 C
R324	10kΩ	1 A
VR301	47kΩ(B) (103517)	2 B
C301	0.01μF ±10% 50 WV Mylar Capacitor	1 C
C302	0.04μF +80/−20% 25 WV Ceramic Capacitor	2 C
C303	10pF ±10% 50 WV Ceramic Capacitor	2 C
C304	430pF ± 5% 125WV Styrol Capacitor	2 C
C305	3.3μF 16 WV Electrolytic Capacitor	2 C
C306	0.01μF ±10% 50 WV Mylar Capacitor	1 C
C307	0.04μF	1 B
C308	0.04μF	1 B
C309	0.04μF +80/−20% 25 WV Ceramic Capacitor	1, 2 B
C310	0.04μF	1 C
C311	0.04μF	2 B
C312	10μF 16 WV Electrolytic Capacitor	2 B
C313	0.04μF +80/−20% 25 WV Ceramic Capacitor	1, 2 B
C314	10μF 16 WV Electrolytic Capacitor	1 B
C315	0.04μF +80/−20% 25 WV Ceramic Capacitor	1 B
C316	0.01μF ±10% 50 WV Mylar Capaitor	1 A
C317	0.04μF	1 A, 1 B
C318	0.04μF +80/−20% 25 WV Ceramic Capacitor	1, 2 A
C319	0.001μF	1 A
C320	0.022μF	1 A
C321	0.02μF ±10% 50 WV Mylar Capacitor	
C322	0.001μF +80/−20% 50 V Ceramic Capacitor	2 A
C323	0.01μF +80/−20% 25 WV Ceramic Capacitor	2 A
C324	3.3μF 25V Electrolytic Capacitor	2 A, B
C325	0.04μF +80/−20% 25 WV Ceramic Capacitor	2 B
C326	100μF 16 WV Electrolytic Capacitor	2 B
C327	10pF ±10% 50 V Ceramic Capacitor	2 B, C
TR301	2SC929 (C~E) (030572-1~3)	1 C
TR302	2SC929 (D) (030572-2)	2 C
TR303	2SC929 (C~E) (030572-1~3)	1 B
TR304	2SC929 (C~E) (030572-1~3)	1 A
TR305	2SC828 (T) (030527)	2 A
D301	IN60	1, 2 A
D302	IN60 (031033, -1)	2 A
D303	IN60	2 A
T301	AM OSC (422023)	2 C
T302(A)	AM IFT 455kHz (423030)	1 C
T302(B)	AM IFT 455kHz (423031)	1 B, C
T303(A)	AM IFT 455kHz (423030)	1 B
T303(B)	AM IFT 455kHz (423031)	1 A, B
T304	AM IFT 455kHz (423041)	1 A


1
2
A
B
C
T304
TR304
T303B
T303A
C315
T302B
T302A
C307
C308
C317
C318
C319
C320
C321
C322
C323
C324
C325
C326
C314
C316
C310
C309
C311
C312
C313
C306
C305
C304
C303
C302
C301
R321
R320
R314
R315
R316
R317
R318
R319
R322
R313
R312
R310
R308
R307
R311
R306
R305
R323
R304
R303
R302
R301
TP301
D301
TR305
D302
D303
F-1259-2
VR301
TR303
TR302
TR301
T301
3D
3F
3E
3B
3A
3C

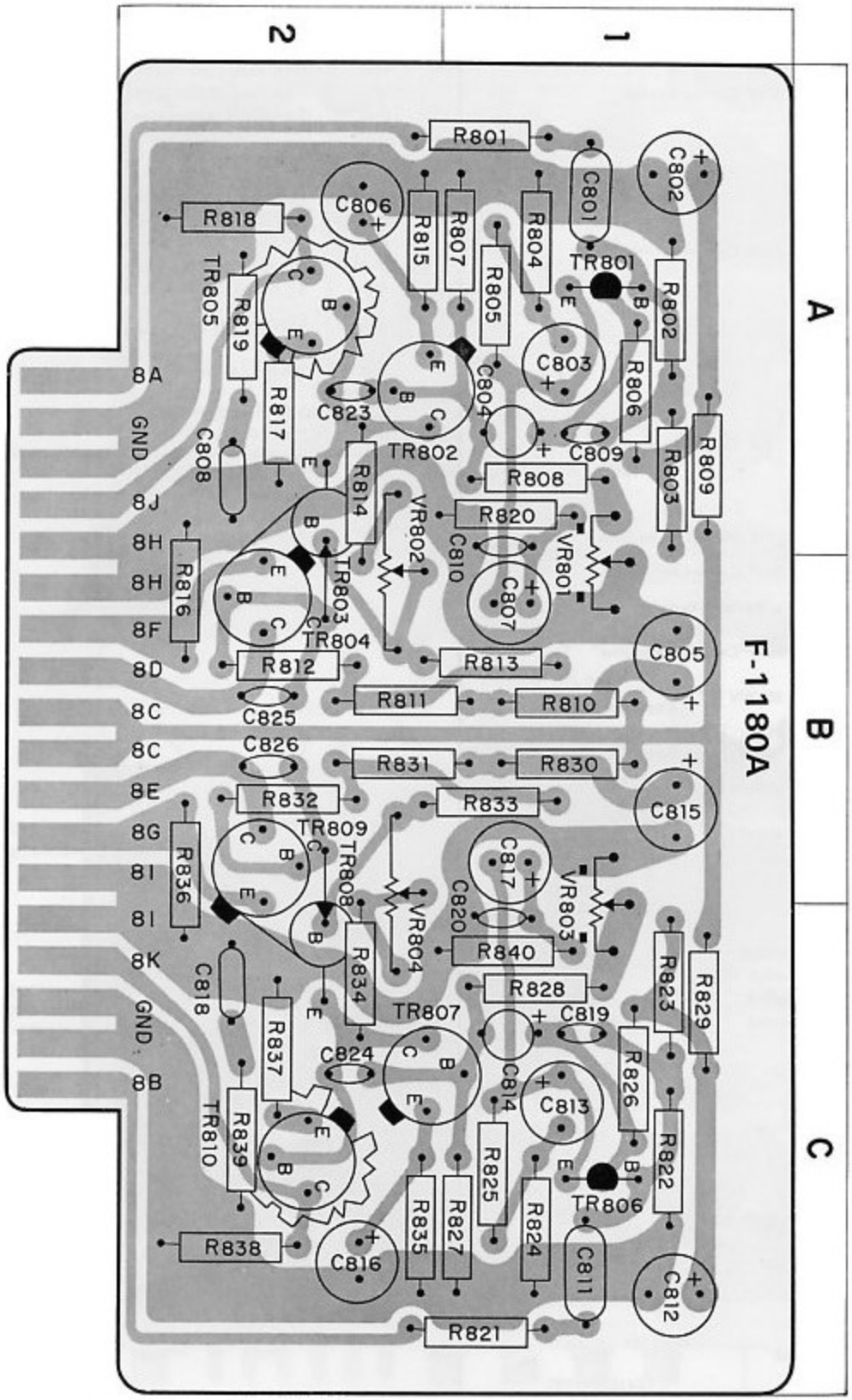
PRINTED CIRCUIT BOARDS AND PARTS LIST

X: Parts No. **Y:** Parts Name **Z:** Position of Parts

DRIVER AMP BLOCK 〈F-1180A〉

X	Y	Z
R801	2.2kΩ }	1, 2 A
R802	150kΩ	1 A
R803	560kΩ	1 A
R804	1kΩ	1 A
R805	3.3kΩ	1 A
R806	3.3kΩ	1 A
R807	10kΩ	1 A
R808	47kΩ	1 A
R809	56kΩ	1 A
R810	1.8kΩ } ±10% ¼W Carbon Resistor	1 B
R811	3.9kΩ	1, 2 B
R812	39Ω	2 B
R813	3.3kΩ	1, 2 B
R814	1.5kΩ	2 A, B
R815	220Ω	2 A
R816	220Ω	2 A, B
R817	39Ω	2 A
R818	220Ω }	2 A
R819	10Ω ±10% ½W Solid Resistor	2 A
R820	22kΩ }	1 A
R821	2.2kΩ	1, 2 C
R822	150kΩ	1 C
R823	560kΩ	1 C
R824	1kΩ	1 C
R825	3.3kΩ	1 C
R826	3.3kΩ	1 C
R827	10kΩ	1 C
R828	47kΩ	1 C
R829	56kΩ } ±10% ¼W Carbon Resistor	1 C
R830	1.8kΩ	1 B
R831	3.9kΩ	1, 2 B
R832	39Ω	2 B
R833	3.3kΩ	1, 2 B
R834	1.5kΩ	2 C
R835	220Ω	2 C
R836	220Ω	2 B, C
R837	39Ω	2 C
R838	220Ω }	2 C
R839	10Ω ±10% ½W Solid Resistor	2 C
R840	22kΩ ±10% ¼W Carbon Resistor	1, 2 C
VR801	200kΩ(B) AC Balance Adjustor (103015)	1 A, B
VR802	1kΩ(B) DC Balance Adjustor (103069)	2 A, B
VR803	200kΩ(B) AC Balance Adjustor (103015)	1 B, C
VR804	1kΩ(B) DC Balance Adjustor (103069)	2 B, C
C801	0.22μF ±10% 50 WV Mylar Capacitor	1 A
C802	100μF 25 WV }	1 A
C803	220μF 10 WV	1 A
C804	10μF 25 WV } Electrolytic Capacitor	1 A
C805	33μF 50 WV	1 B
C806	100μF 6.3 WV	2 A
C807	3.3μF 50 WV }	1 B
C808	0.047μF ±10% 50 WV Mylar Capacitor	2 A
C809	33pF } ±10% 50 WV Ceramic Capacitor	1 A
C810	33pF }	1 A
C811	0.22μF ±10% 50 WV Mylar Capacitor	1 C

X	Y	Z
C812	100μF 25 WV }	1 C
C813	200μF 10 WV	1 C
C814	10μF 25 WV } Electrolytic Capacitor	1 C
C815	33μF 50 WV	1 B
C816	100μF 6.3 WV	2 C
C817	3.3μF 50 WV }	1 B
C818	0.047μF ±10% 50 WV Mylar Capacitor	2 C
C819	33pF }	1 C
C820	33pF	1 C
C823	33pF } ±10% 50 WV Ceramic Capacitor	2 A
C824	33pF	2 C
C825	330pF	2 B
C826	330pF }	2 B
TR801	2SC458LG(B) (030531)	1 A
TR802	2SC627(2) (030558-1)	2 A
TR803	2SC281(B) (030512-1)	2 A, B
TR804	2SC959 (K, L, M) (0305741,2,3)	2 B
TR805	2SA606 (K, L, M) (0300211,2,3)	2 A
TR806	2SC458LG(B) (030531)	1 C
TR807	2SC627(2) (030558-1)	1, 2 C
TR808	2SC281(B) (030512-1)	2 B, C
TR809	2SC959 (K, L, M) (0305741,2,3)	2 B, C
TR810	2SA606 (K, L, M) (0300211,2,3)	2 C


F-1180A
1
2
A
B
C
R801
C802
C801
C806
R818
R815
R807
R804
TR801
R802
R805
C803
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C804
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C823
TR802
C809
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TR805
R819
R817
C808
R814
R820
VR802
VR801
C810
C807
R816
TR803
TR804
C805
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R811
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C825
C826
R831
R830
C815
R832
R833
TR809
TR808
C817
VR803
C820
VR804
R840
R836
R834
R828
R823
R829
C818
TR807
C819
R837
C824
C814
C813
R826
R822
R839
TR810
TR806
R825
R824
R838
R835
R827
C816
C811
C812
R821
8A
GND
8J
8H
8H
8F
8D
8C
8C
8E
8G
8I
8I
8K
GND
8B

OTHER PARTS AND THEIR POSITION ON CHASSIS

X: Parts No. **Y:** Parts Name

X	Y
R031	2.2kΩ }
R051	56Ω } ±10% ¼W Carbon Resistor
R052	680Ω }
R053	10Ω }
R061	68kΩ
R062	68kΩ
R063	12kΩ
R064	12kΩ
R065	33kΩ } ±10% ¼W Carbon Resistor
R066	33kΩ
R067	100kΩ
R068	100kΩ
R069	820kΩ
R070	820kΩ }
R071	0.5Ω }
R072	0.5Ω
R073	0.5Ω
R074	0.5Ω } ±10% 2W Cement Resistor
R075	330Ω
R076	330Ω }
R077	560Ω } ±10% 1W Metal Film Resistor
R078	560Ω }
R079	18Ω ±10% ¼W Carbon Resistor
VR703, 704	250kΩ(B)×2 Volume, Variable Resistor
C051	0.04μF } +80% −20% 25W Ceramic Capacitor
C052	0.04μF }
C053	2200μF } 50 WV Electrolytic Capacitor
C054	2200μF }
C055	2200μF 80 WV } Electrolytic Capacitor
C056	1000μF 50 WV }
C057	0.033μF } ±10% 600WV } Oil Capacitor
C058	0.0047μF }
C059	0.068μF } ±10% 400WV }
C060	0.068μF }
TR051~054	2SD260 or 2SC494 (R, Y, BL) (030825-1) (0305220,1,2)
S1	Selector Switch Y-4-10-4 (110415)
S2	Speaker Selector Switch Y-1-4-4 (110121)
S3	Tape Monitor (1) Switch (117017)
S4	Tape Monitor (2) Switch (117017)
S5	Mode Switch (117017)
S6	Loudness Switch (117017)
S7	High Filter Switch (117017)
S8	Antenna Att. Switch (111009)
S9	Muting Switch (117017)
S10	Power Switch (113016)
J001	DIN Connector (243004)
J002	Headphones Jack (243007-1)
J003	Multi Connector (242002)
M001	Tuning Meter (090020-1)
PT001	Power Transformer 400-5384 (400067)
PU001	Voltage Selector (241017~19)

X	Y	
F001	3A Fuse (100~127V)	(043004-2)
	2A Fuse (220~250V)	(043003-2)
F002,003	2.5A Quick Acting Fuse	(043001-1)
CO001	AC Outlet	(245001)
PL001	7V 200mA Phono Indicator Lamp	(040015-4)
PL002~007	6.3V 250mA Pilot Lamp F Type	(042002)
PL008	7V 200mA AUX Indicator Lamp	(040015-5)
PL009	5V 60mA Needle Indicator	(040010-1)
PL010	6V 100mA Stereo Indicator Lamp	(040016)
T001	75Ω : 300Ω High Frequency Transformer	(429002-1)
T002	220μH AM Bar Antenna	(420031)
L001	150μH Ferri Inductor	(490008)
L002	1μH Micro Inductor	(4900140)

* Design and specifications subject to change without notice for improvements.